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United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Reston, Virginia 22092

Date: 10-09-98

To: BRUCE HALSTEAD, FWS

Telephone #: _____

Fax #: 707 822 8411

From: BETH COX, EAP

Telephone #: 703 648 6832 *Fax #:* 703/ 648-4530

Number of Pages to follow: 4

Comments:

USGS comments re: PRT-828950

If there are any problems with this fax, please call:

Beth Cox
Environmental Affairs Program
703/648-6832

United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Reston, Virginia 22092

In Reply Refer To:
Mail Stop 423

OCT 7 1998

Memorandum

To: Bruce Halstead, U.S. Fish and Wildlife Service

From: James F. Devine
Senior Advisor for Science Applications

Subject: Review of the Draft Environmental Impact Statement for Sustained Yield Plan/ Habitat Conservation Plan, Humboldt County, California

The U.S. Geological Survey has reviewed the subject draft environmental impact statement (EIS) and offers the following comments and observations. USGS-1

General Comments:

The terminology in Vol. I, Vol. II (Part D and Vol. V (Maps 11, 12, and 13) needs to be consistent. The terms 'mass wasting', 'landside hazard', 'risk', 'sensitivity', 'surface erosion hazard', 'unstable areas', 'susceptibility', and 'disrupted ground' seem to be used interchangeably without full definition or explanation of how they relate to each other or how they relate to the data presented in Maps 11, 12, and 13. The document could be improved by including references to the specific CDMG map sheets that are used.

Specific Comments:

Vol. I, Page 58; Hillslope Management

A definition of mass wasting is needed here.

A reference to specific maps with regard to '..."extreme" mass wasting potential...' is needed. If inner gorges and headwall swales are considered non-harvest and non-road areas, then they should have ratings of 26 on the Watershed Sensitivity Factors under the Geomorphology or Slopes Table in Vol. II, Part D, Page 5. In addition, headwall swales should be included as a geomorphic unit in the table. Indicate how the Pacific Lumber Company defines 'unstable area' and how that differs from slide and/or debris slide, or 'disrupted area' as mapped by CDMG on Map 11 (Vol. V).

A clarification of the terms 'very high' or 'high' ratings for mass wasting and a map reference is needed. An indication of which ratings relate to which maps would be helpful.

Vol. II, Part D: Landscape Assessment of Geomorphic Sensitivity

Page 1, Background:

The term 'land disturbance' seems more appropriate than 'land management' in this context.

Page 2, Approach:

A quantitative scale needs to be specified rather than using the term 'landscape scale'.

Specify the source and scale of the digital elevation data. Are the input data from the USGS 90 m DEM's?

Clarify the relation between 'a landscape sensitivity rating' and Map 13 (Vol. V), which is titled "Landslide Hazard Index." Perhaps Map 13 should be titled 'Sensitivity Map' for consistency.

A reference for the bedrock geology is needed. Without a reference section, the full citation for Atwell as it relates to the soils data is needed.

Page 3:

Define the term 'natural susceptibility' and provide a reference to the appropriate map or data.

Volume V

Map 11:

A definition is needed for the area colored red and labeled "Disrupted Ground." For the area colored yellow and labeled "Amphitheater/Slope," please indicate the slope value. A definition for the area colored green and labeled "Unstable Areas" is needed.

Map 12:

The legend for Map 12 should indicate the data layers from Tables 1-4 (Vol. II, Part D, pages 5-6) that were combined to make the map. The ratings of 'Low to Extreme' needs to be related to the numeric values from Table 4, "Watershed Sensitivity Factors - Soils" (Vol. II, Part D, pages 5-6).

Map 13:

The legend for Map 13 should indicate the data layers from Tables 1-4 (Vol. II, Part D, pages 5-6) that were combined to make the map. Also, it is unclear whether Map 13 includes soils information as one of the data layers.

There are also a number of references to important mass wasting studies from the Humboldt County region that have relevance to the slope stability and mass wasting issues. Some of these might also be appropriately cited.

Bedrossian, T.L., 1983, Watersheds mapping in northern California: California Geology, 36, 140-147.

Bedrossian, T.L. and Hannan, D.L., 1983, Watersheds mapping on state and private forested lands in Northern California: Engineering geology today and tomorrow: Association of Engineering Geologists 26th annual meeting; Engineering geology today and tomorrow, 26, 54.

Best, D.W., Kelsey, H.M., Hagans, D.K., et al., 1995, Role of fluvial hillslope erosion and road construction in the sediment budget of Garrett Creek, Humboldt County, California: Geomorphic processes and aquatic habitat in the Redwood Creek basin, northwestern California: U. S. Geological Survey Professional Paper, M1-M9.

Harden, D.R., Janda, R.J. and Nolan, K.M., 1978, Mass movement and storms in the drainage basin of Redwood Creek, Humboldt County, California; a progress report: Open-File Report - U. S. Geological Survey, 164.

Harden, D.R., Nolan, K.M., Kelsey, H.M., et al., 1995, A comparison of flood-producing storms and their impacts in northwestern California: Geomorphic processes and aquatic habitat in the Redwood Creek basin, northwestern California: U. S. Geological Survey Professional Paper, D1-D9.

Huber, O.L. and Spittler, T.E., 1996, 1995 Redway landslide: California Geology, 49, 151-161.

Janda, R.J., Nolan, K.M., Harden, D.R., et al., 1975, Watershed conditions in the drainage basin of Redwood Creek, Humboldt County, Calif., as of 1973: Open-File Report - U. S. Geological Survey, 266.

Kelsey, H., Madej, M.A., Pitlick, J., et al., 1981, Major sediment sources and limits to the effectiveness of erosion control techniques in the highly erosive watersheds of northern coastal California: Erosion and sediment transport in Pacific Rim steeplands: Erosion and sediment transport in Pacific Rim steeplands, Christchurch, New Zealand, 493-509.

Kelsey, H.M., 1978, Earthflows in Franciscan melange, Van Duzen River basin, California: Geology (Boulder), 6, 361-364.

Kelsey, H.M., Coghlan, M., Pitlick, J.C., et al., 1995, Geomorphic analysis of streamside landslides in the Redwood Creek basin, northwestern California: Geomorphic processes and aquatic habitat in the Redwood Creek basin, northwestern California: U. S. Geological Survey Professional Paper, J1-J12.

Kelsey, H.M., Weaver, W.E. and Bundros, G., 1979, An evaluation of erosion control devices used in gullies within Redwood National Park, northern California: The Geological Society of America, Cordilleran Section, 75th annual meeting, 11, 86-87.

Popenoe, J.H., Bevis, K.A., Gordon, B.R., et al., 1992, Soil-vegetation relationships in Franciscan terrain of northwestern California: Soil Science Society of America Journal, 56, 1951-1959.

Swanston, D.N., Ziemer, R.R., Janda, R.J., et al., 1995, Rate and mechanics of progressive hillslope failure in the Redwood Creek basin, northwestern California: Geomorphic processes and aquatic habitat in the Redwood Creek basin, northwestern California: U. S. Geological Survey Professional Paper, E1-E16.

Weaver, W.E., Kelsey, H.M., Madej, M.A., et al., 1979, Minimizing concentrated runoff, surface erosion and mass slope movement in Redwood National Park by removing former logging haul roads: The Geological Society of America, Cordilleran Section, 75th annual meeting, 11, 134.

Weaver, W.E., Madej, M.A., Davies, T.R.H., et al., 1981, Erosion control techniques used in Redwood National Park, northern California, 1978-1979: Erosion and sediment transport in Pacific Rim steeplands: Erosion and sediment transport in Pacific Rim steeplands, Christchurch, New Zealand, 640-654.

Thank you for the opportunity to contribute information that we hope will help maintain environmental quality in Humboldt County.

Copy to: Director, Office of Environmental Policy and Compliance